

We claim

1. A catalyst for heterogeneously catalyzed reactions, which
5 comprises active components and a catalyst support
comprising amounts of $\delta\text{-Al}_2\text{O}_3$ which can be detected by X-ray
diffractometry.
2. A catalyst for heterogeneously catalyzed reactions as
10 claimed in claim 1, wherein the catalyst support comprises
from 10 to 100% by weight of $\delta\text{-Al}_2\text{O}_3$.
3. A catalyst for heterogeneously catalyzed reactions as
15 claimed in either of claims 1 and 2, wherein the active
components employed are from 1 to 15% by weight of copper,
from 0.1 to 6% by weight of alkali metals, from 0 to 5% by
weight of alkaline earth metals, rare-earth metals or
mixtures thereof.
- 20 4. A catalyst for heterogeneously catalyzed reactions as
claimed in claim 1, prepared by impregnating a shaped
 $\delta\text{-Al}_2\text{O}_3$ -containing support having a BET surface area of from
80 to 250 g/m^2 with salts of copper, alkali metals and, if
desired, alkaline earth metals, rare-earth metals or
25 mixtures thereof.
5. A process for the preparation of a catalyst for
heterogeneously catalyzed reactions as claimed in one of
claims 1 to 3, which comprises impregnating the
30 $\delta\text{-Al}_2\text{O}_3$ -containing support with salts of copper, alkali
metals and, if desired, alkaline earth metals, rare-earth
metals or mixtures thereof, separately from one another or
together, if desired with the addition of acids or oxidants.
- 35 6. A process for the preparation of a catalyst for
heterogeneously catalyzed reactions as claimed in claim 5,
wherein the salts employed are chlorides.
7. The use of a catalyst for heterogeneously catalyzed
40 reactions as claimed in one of claims 1 to 4 for exothermic
gas-phase reactions.
8. The use of a catalyst for heterogeneously catalyzed
45 oxychlorination reactions.

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9. The use of a catalyst for heterogeneously catalyzed reactions as claimed in one of claims 1 to 4 for the oxychlorination of ethylene to 1,2-dichloroethane.

5 10. A process for the preparation of 1,2-dichloroethane, which comprises reacting ethylene with hydrogen chloride and air or oxygen in the presence of a catalyst as claimed in one of claims 1 to 4 at a temperature of from 150 to 400°C and a pressure of from 1 to 10 bar.

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11. The use of a catalyst for heterogeneously catalyzed reactions as claimed in one of claims 1 to 4 for partial oxidation reactions.

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